CLAIMS:

1. A method of forming a female spline of a hub unit for supporting a wheel, comprising the steps of:

forming a work for a hub unit which consists of a hub integrally comprising a flange for attaching a wheel and a shaft portion formed with a hole extended in the axial direction and a rolling bearing fitted and attached on said shaft portion of this hub with an outer end of an inner race being fixed at the other end of said shaft portion in the axial direction by plastically deforming by caulking (or clinching); and

subsequently, forming a female spline by semi-dry or dry broaching on said hole of said shaft portion.

2. A method of processing a female spline of a hub unit for supporting a wheel according to claim 1, wherein said hole has the form that the size thereof is greater at a portion nearer a portion plastically deformed by caulking (or clinching) of said shaft portion for an estimated amount of contraction caused by the plastically deforming by caulking (or clinching) and press-fitting of the inner race element.

3. A method of forming a female spline of a hub

unit for supporting a wheel comprising the steps of:

roughly processing a female spline by broaching on a hole of a work for a hub which integrally comprises a flange for attaching a wheel and a shaft portion formed with said hole extended in the axial direction;

fitting and attaching a bearing on said shaft portion of the work for the hub and fitting and fixing the outer end of an inner race of said shaft at the other end portion of said shaft portion in the axial direction by plastically deforming by caulking (or clinching); and

subsequently, finishing the female spline by semi-dry or dry broaching on said hole of said shaft portion on which the spline is roughly processed.

4. A method of processing a female spline of a hub unit for supporting a wheel according to claim 3, wherein the rough processing of said female spline by broaching is carried out by press-fitting a ring on said shaft portion, or by chucking a part of said shaft portion so as to form the hole such that the size thereof is greater at a portion nearer a portion plastically deformed by caulking (or clinching) of said shaft portion for an estimated amount of contraction caused by plastically deforming and press-fitting of an inner race element and the

broaching work is conducted in this state.

5. A method of processing a female spline of a hub unit for supporting a wheel according to claim 1, wherein said hub unit is provided with a seal or a detachable cap so as to perform a semi-dry or dry broaching work.

6. A method of processing a female spline of a hub unit for supporting a wheel according to claim 3, wherein said hub unit is provided with a seal or a detachable cap so as to perform a semi-dry or dry broaching work.

7. A method of processing a female spline of a hub unit for supporting a wheel according to claim 1, wherein cleaning means is employed for removing chips attached to a tool in the course of said semi-dry or dry broaching work.

8. A method of processing a female spline of a hub unit for supporting a wheel according to claim 3, wherein cleaning means is employed for removing chips attached to a tool in the course of said semi-dry or dry broaching work.

9. A method of processing a female spline of a

hub unit for supporting a wheel according to claim 1, wherein covering means which is opened only when the tool comes in or goes out is provided either one or both on a side upper than the upper end of said hub unit and on a side lower than a surface on which the hub unit is installed, and semi-dry or dry broaching work is performed by intercepting chips falling on the hub unit by means of this covering means.

10. A method of processing a female spline of a hub unit for supporting a wheel according to claim 3, wherein covering means which is opened only when the tool comes in or goes out is provided either one or both on a side upper than the upper end of said hub unit and on a side lower than a surface on which the hub unit is installed, and semi-dry or dry broaching work is performed by intercepting chips falling on the hub unit by means of this covering means.

11. A method of forming a female spline of a hub unit for supporting a wheel according to any one of claims 3, 6, 8 and 10, wherein a direction of the broaching work for roughly processing the female spline is the reverse of a direction of the finishing work of said female spline.

12. A hub unit which is processed by a method

according to any one of claims 1 to 10.

13. A hub unit which is processed by a method according to claim 11.